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INTERNATIONAL PRELIMINARY EXAMINATION REPORT (PCT Article 36 and Rule 70)



Applicant's or agent's file reference P100916WO	FOR FURTHER ACTION See Notification of Transmittal of International Preliminary Examination Report (Form PCT/PEA/416)	
International application No. PCT/GB 03/04168	International filing date (day/month/year) 26.09.2003	Priority date (day/month/year) 26.09.2002
International Patent Classification (IPC) or both national classification and IPC G21F9/28		
Applicant BNFL(IP) LIMITED et al.		

1. This international preliminary examination report has been prepared by this International Preliminary Examining Authority and is transmitted to the applicant according to Article 36.
2. This REPORT consists of a total of 6 sheets, including this cover sheet.

☒ This report is also accompanied by ANNEXES, i.e. sheets of the description, claims and/or drawings which have been amended and are the basis for this report and/or sheets containing rectifications made before this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions under the PCT).

 These annexes consist of a total of 3 sheets.

3. This report contains indications relating to the following items:
 - I ☒ Basis of the opinion
 - II ☐ Priority
 - III ☐ Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
 - IV ☐ Lack of unity of invention
 - V ☒ Reasoned statement under Rule 66.2(a)(ii) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
 - VI ☐ Certain documents cited
 - VII ☐ Certain defects in the international application
 - VIII ☐ Certain observations on the international application

Date of submission of the demand 23.04.2004	Date of completion of this report 25.11.2004
Name and mailing address of the international preliminary examining authority:  European Patent Office D-80298 Munich Tel. +49 89 2399 - 0 Tx: 523656 epmu d Fax: +49 89 2399 - 4465	Authorized Officer Lohberger, S Telephone No. +49 89 2399-6723 

**INTERNATIONAL PRELIMINARY
EXAMINATION REPORT**

International application No. **PCT/GB 03/04168**

I. Basis of the report

1. With regard to the **elements** of the international application (*Replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to this report since they do not contain amendments (Rules 70.16 and 70.17)*):

Description, Pages

1-23 as originally filed

Claims, Numbers

1-18 received on 16.08.2004 with letter of 12.08.2004

Drawings, Sheets

1/3-3/3 as originally filed

2. With regard to the **language**, all the elements marked above were available or furnished to this Authority in the language in which the international application was filed, unless otherwise indicated under this item.

These elements were available or furnished to this Authority in the following language: , which is:

- ☐ the language of a translation furnished for the purposes of the international search (under Rule 23.1(b)).
- ☐ the language of publication of the international application (under Rule 48.3(b)).
- ☐ the language of a translation furnished for the purposes of international preliminary examination (under Rule 55.2 and/or 55.3).

3. With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application, the international preliminary examination was carried out on the basis of the sequence listing:

- ☐ contained in the international application in written form.
- ☐ filed together with the international application in computer readable form.
- ☐ furnished subsequently to this Authority in written form.
- ☐ furnished subsequently to this Authority in computer readable form.
- ☐ The statement that the subsequently furnished written sequence listing does not go beyond the disclosure in the international application as filed has been furnished.
- ☐ The statement that the information recorded in computer readable form is identical to the written sequence listing has been furnished.

4. The amendments have resulted in the cancellation of:

- ☐ the description, pages:
- ☐ the claims, Nos.:
- ☐ the drawings, sheets:

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5. ☐ This report has been established as if (some of) the amendments had not been made, since they have been considered to go beyond the disclosure as filed (Rule 70.2(c)).

(Any replacement sheet containing such amendments must be referred to under item 1 and annexed to this report.)

6. Additional observations, if necessary:

V. Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

1. Statement

Novelty (N)	Yes: Claims	1-7
	No: Claims	8-18
Inventive step (IS)	Yes: Claims	1-7
	No: Claims	8-18
Industrial applicability (IA)	Yes: Claims	1-18
	No: Claims	

2. Citations and explanations

see separate sheet

Re Item V

Reasoned statement with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

1. Reference is made to the following document/s:
D1: US 2002/134770 A1 (YOUNGMAN KEVIN ET AL) 26 September 2002 (2002-09-26)
D2: US-A-5 780 806 (PANG HO-MING ET AL) 14 July 1998 (1998-07-14)
D3: GB-A-2 316 528 (COMMISSARIAT ENERGIE ATOMIQUE) 25 February 1998 (1998-02-25)
D4: US-A-6 056 827 (SHIMIZU KOUKI ET AL) 2 May 2000 (2000-05-02)
2. Present set of claims is in accordance with article 41(2) PCT (no added subject-matter).
3. The present application does not meet the criteria of Article 33(1) PCT, because the subject-matter of claims 8-16 is not new in the sense of Article 33(2) PCT.

The present wording of independent claim 8 covers almost all laser apparatuses well known in the field of resist imaging in photolithography. There a laser beam is directed towards a waver surface. On this surface is located a mask. This mask removes a lower power density part of the laser beam. Consequently the subject-matter of claim 8 is not novel over the well established knowledge of the skilled man in the field of photolithography.

If the Applicant wishes a huge pile of documents establishing this knowledge can be cited.

Dependent claims 9 to 16 do not add any novel matter not already known for masks in the field of photolithography.

4. Applicants argumentation with regard to claims 1 to 7 is convincing.

Independent claim 1 is in accordance with article 33 PCT with regard to novelty and inventive step:

The document **D1** discloses (the references in parentheses applying to this

document):

a method of treating a surface for the removal of a surface portion thereof, comprising the steps of producing a beam of laser light focussing the laser beam (and not obscuring a low power density part of the laser beam) before irradiating a surface location with the laser light. (see description para 48 to 54 and Fig. 4). The stack (25) used in D1 cannot be regarded as the technical equivalent to a shadow mask as presented in present application, fig. 5. D1 is silent about the removal of a low power density part of the laser beam before irradiating the surface location.

The document **D2** discloses (the references in parentheses applying to this document):

a method of treating a surface for the removal of a surface portion thereof, comprising the steps of producing a beam of laser light and focussing it. The obscuring of a low power density part of the laser beam by a mask before irradiating a surface location with the laser light is not mentioned. (see description column 2, line 35 to column 6, line 49, figure 3 and claims).

The document **D3** discloses (the references in parentheses applying to this document):

a method of treating a surface for the removal of a surface portion thereof, comprising the steps of producing a beam of laser light and focussing it. Again the obscuring a low power density part of the laser beam by a mask before irradiating a surface location with the laser light is not mentioned. (see description page 3, line 23 to page 13, line 22 and claims).

The document **D4** discloses (the references in parentheses applying to this document):

a method of treating a surface for the removal of a surface portion thereof, comprising the steps of producing a beam of laser light and focussing it. The nozzle 36 does not obscure a low power density part of the laser beam before irradiating a surface location with the laser light. (see description column 2, line 30 to column 6, line 13 and claims).

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All these documents use a focussing system for the laser beam and are silent about the use of a mask before irradiating the surface location.

3. Dependent claims 2 to 7 are preferred embodiments of claim 1 and as such they fulfil the requirements of article 33 PCT as well with regard to novelty and inventive step.
4. The subject-matter of present claims 17 and 18 does not comply with the requirements of article 6 PCT (scope of the claim is unclear) in that these claims refer to undefined passages in present description.